

ENVIRONMENTAL CHECKLIST

2. Name of applicant: Daniel C. Phillips - 352-3310 WL HM 943-4370
3. Address and telephone number of applicant and contact person:
5315 Blvd. Ext. Rd. Olympia, WA. 98501 (206) 943-4370
4. Date checklist prepared: 2-11-87
5. Agency requesting checklist: Mason Co. Dept. of General Services.
6. Proposed timing or schedule (including phasing, if applicable):
Begin construction in June, 1987, with substantial completion by mid-September, 1987.
7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
- No
8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.
Water flow charts
Temperature charts : All completed by the Washington State Dept. of Stream survey Fisheries.
9. Do you know whether applications are pending for governmental approvals or other proposals directly affecting the property covered by your proposal? If yes, explain.
- No
10. List any government approvals or permits that will be needed for your proposal, if known.
Building, grading, electrical, and mechanical permits from Mason Co.
Hydraulic Project approval from Depts. of Fisheries and Game.
NPDES Permit from Dept. of Ecology.
Forest practices permit from Dept. of Natural Resources. & perhaps
11. Give brief, complete description of your proposal, including the proposed uses and size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.

I propose to build and operate a fresh-water salmon rearing facility. The fish are to be sold on the open market. The site is approximately 13.5 acres of which the project will encompass 5 acres.

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12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map.

North 2841 Sunnyside Rd., Shelton, WA 98584
Section 8. Township 21 N, Range 4W, W.M. situated in Mason Co.
(Legal disc.)

TO BE COMPLETED BY APPLICANT

B. ENVIRONMENTAL ELEMENTS

1. Earth Flat and rolling, gently sloping to the North.

(a) General description of the site (circle one): flat, rolling, hilly, steep slopes, mountainous, other _____.

See above.

(b) What ² is the steepest slope on the site (approximate percent slope)?

(c) What ² general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

^{2-3%}

Generally rocky, however there is farmland approximately $\frac{1}{4}$ mile west.

(d) Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No

(e) Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

Grading to accomodate raceways, ponds, and buildings.

(f) Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Since construction will take place in the summer, no erosion should occur. However, if rain threatens, erosion can be controlled with haybales.

(g) About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Approximately 3% of a five acre site (6000 sq.ft.). This may vary due to vehicle parking requirements, if any, by Mason Co.

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(h) Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Areas without gravel or impervious surfaces will be landscaped to control erosion.

2. Air

(a) What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

The equipment used in construction will emit carbon monoxide and dust. Once construction is complete, emissions will be limited to that caused by delivery trucks, employee and visitor parking (vehicles).

(b) Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No

(c) Proposed measures to reduce or control emissions or other impacts to air, if any:

None

3. Water

(a) Surface

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Yes. Richert Springs flows through property and into Skokomish River approximately $\frac{1}{2}$ mile down from the site. There are also seasonal run-off streams within one mile of the site.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Yes. A 5 CFS intake system will be placed at the edge of the spring.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Approximately 10 cu. yds. of dirt will need to be removed from the banks of the spring's north branch (See attached).



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4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

Yes. 5 CFS of water will be withdrawn from Richert Springs for the purpose of salmon rearing.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

Yes. (See attached).

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No. (See attached).

(b) Ground

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

Yes. 8 CFS of ground water will be withdrawn from wells for use in salmon rearing.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: domestic sewage; industrial, containing the following chemicals ...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Domestic sewage to serve up to 6 people. The size of the system will be determined by Mason Co. Health Dept.

(c) Water Runoff (Including storm water)

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other water? If so, describe.

The runoff will be rainwater, collected in gutters and disposed of via tight line piping to engineered dry wells.

2) Could waste materials enter ground or surface waters? If so, generally describe.

No

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(d) Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

Landscaping and dry wells as mentioned in water section #2C.

4. Plants

(a) Check or circle types of vegetation found on the site:

- deciduous tree: alder, maple, aspen, other
- evergreen tree: fir, cedar, pine, other
- shrubs
- grass
- crop or grain
- wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- water plants: water lily, eelgrass, milfoil, other
- other types of vegetation

(b) What kind and amount of vegetation will be removed or altered?

Deciduous, evergreen, shrubs and grass. Most of the 5 acre site has been cleared within the last 5 years. Small alders and blackberries abound.

(c) List threatened or endangered species known to be on or near the site.

None. On site

(d) Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Site will be landscaped for beautification and erosion control.

5. Animals

(a) Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

birds: hawk, heron, eagle, songbirds, other: _____
 mammals: deer, bear, elk, beaver, other: rodents
 fish: bass, salmon, trout, herring, shellfish, other: _____

(b) List any threatened or endangered species known to be on or near the site.

Bald-headed eagles are known to be in the Skokomish valley.

(c) Is the site part of a migration route? If so explain.

Not known.

(d) Proposed measures to preserve or enhance wildlife, if any:

Communicated with Dept. of Fisheries to conduct a spawning enhancement program.

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6. Energy and Natural Resources

(a) What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electric--used for pumping water and heating the residence.

(b) Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No

(c) What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

None

7. Environmental Health

(a) Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

No, unless during construction there is an accidental spill of fuels. All chemicals used in the treatment of fish will be FDA approved and held in a dose tank as recommended by DOE.

1) Describe special emergency services that might be required.

Fire, ambulance, police with risks no greater than that attendant with any human activity

2) Proposed measures to reduce or control environmental health hazards, if any:

All FDA approved innoculants, if any, will be stored in a dose tank and disposed of at an appropriate treatment facility.

(b) Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic construction, operation, other)? Indicate what hours noise would come from the site.

Noise attendant with clearing, grubbing, construction and well drilling during normal business hours. On a long term basis, minimal traffic noise generated by a maximum of 4 employees and low-level noise from well pumps and the flow of water into tanks and ponds occuring constantly.

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- 3) Proposed measures to reduce or control noise impacts, if any:
No construction at night. The well pumps will be housed in heavily sound and temperature insulated enclosures.

8. Land and Shoreline Use

- (a) What is the current use of the site and adjacent properties?
Very low density residential, agricultural and 4 hatcheries within a 2 mile radius.

- (b) Has the site been used for agriculture? If so, describe.
No

- (c) Describe any structures on the site.
A small residence, 2 storage sheds and pump house with well.

- (d) Will any structures be demolished? If so, what?
None anticipated.

- (e) What is the current zoning classification of the site?
Unzoned.

- (f) What is the current comprehensive plan designation of the site?
Agricultural flood plain.

- (g) If applicable, what is the current shoreline master program designation of the site?
Rural.

- (h) Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.
No.

- (i) Approximately how many people would reside or work in the completed project?
A resident superintendant and up to 3 employees.

- (j) Approximately how many people would the completed project displace?
None.

- (k) Proposed measures to avoid or reduce displacement impacts, if any:
n/a

- (l) Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
Aquaculture is a non-intensive land use and should be compatible with any existing and projected land uses.

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9. Housing

(a) Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

1 middle income residence for superintendant.

(b) Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

(c) Proposed measures to reduce or control housing impacts, if any:

None.

10. Aesthetics

(a) What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

12 ft; wood and metal siding and concrete for raceways.

(b) What views in the immediate vicinity would be altered or obstructed? The natural forest and grasslands on the site will be replaced by aquaculture buildings and ponds.

(c) Proposed measures to reduce or control aesthetic impact, if any:

Construction will impact approx. one-third of entire site and should not be notably visible from neighboring properties of the road.

11. Light and Glare

(a) What type of light or glare will the proposal produce? What time of day would it mainly occur? Mercury vapor lights will illuminate portions of the facility at night. The greater expanse of water surface in ponds may result in more reflective glare.

(b) Could light or glare from the finished project be a safety hazard or interfere with views?

No.

(c) What existing off-site sources of light or glare may affect your proposal?

None.

(d) Proposed measures to reduce or control light and glare impacts, if any:

Lights to be directed away from neighboring areas.

12. Recreation

(a) What designated and informal recreational opportunities are in the immediate vicinity?

On the Skokomish River there exists a public fishing access point approx. 1 mile from the proposed site.

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(b) Would the proposed project displace any existing recreational uses? If so, describe.

No.

(c) Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Educational tours of facility will be available by appointment.

13. Historic and Cultural Preservation

(a) Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

Not known.

(b) Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

None.

(c) Proposed measures to reduce or control impacts, if any:

If during construction anything of archaeological, scientific, or cultural importance is unearthed, work will be stopped and the appropriate authorities immediately notified.

14. Transportation

(a) Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

Sunnyside Rd off Highway 101 in Shelton.

(b) Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

No. approx. 2 miles to 101.

(c) How many parking spaces would the completed project have? How many would the project eliminate?

Whatever number is required by Mason Co.

8 spaces

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(d) Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

No.

(e) Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

(f) How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

4 employees coming and going from the site on a daily basis at 8 AM and 5 PM with intermittent supply deliveries and transportation of cultivated fish.

(g) Proposed measures to reduce or control transportation impacts, if any:

None.

15. Public Services

(a) Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

A very minimal increase, if any, in need for emergencies and/or emergency services.

(b) Proposed measures to reduce or control direct impacts on public services, if any.

None.

16. Utilities

(a) Circle utilities currently available at the site: electricity, natural gas, water, refuse services, telephone, sanitary sewer, septic system, other.

(b) Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

Electricity--PUD
Water--wells, telephone -PNWB
Septic system--approved
septic design on site.

C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Daniel Phillips

Date Submitted: 02/27/07



PHILLIPS FISH HATCHERY CONCEPT

8 CFS WELLS ; 5 CFS SPRING
TOTAL = 5850 GPM

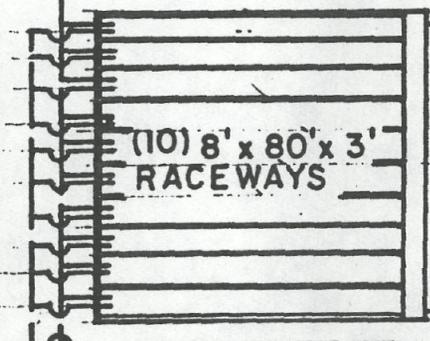
TRAILER
PAD

30 x 40
STORAGE

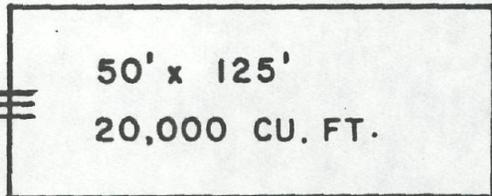


WELL
SITE

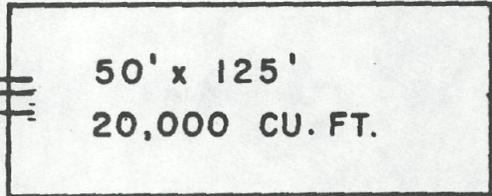
WELL



(10) 8' x 80' x 3'
RACEWAYS



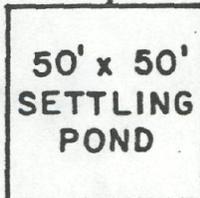
50' x 125'
20,000 CU. FT.



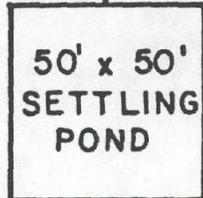
50' x 125'
20,000 CU. FT.

WELL

WELL
SITE



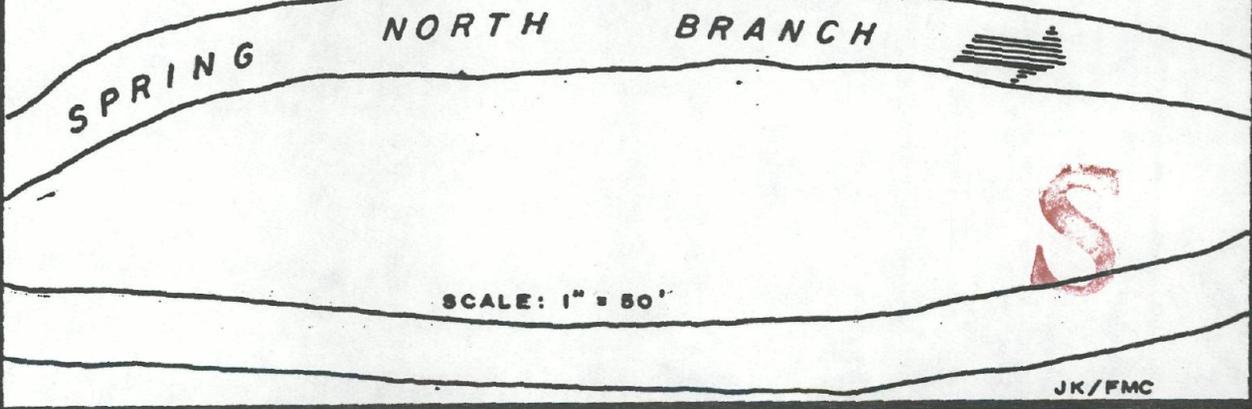
50' x 50'
SETTLING
POND



50' x 50'
SETTLING
POND

PUMP
INTAKE

WELL

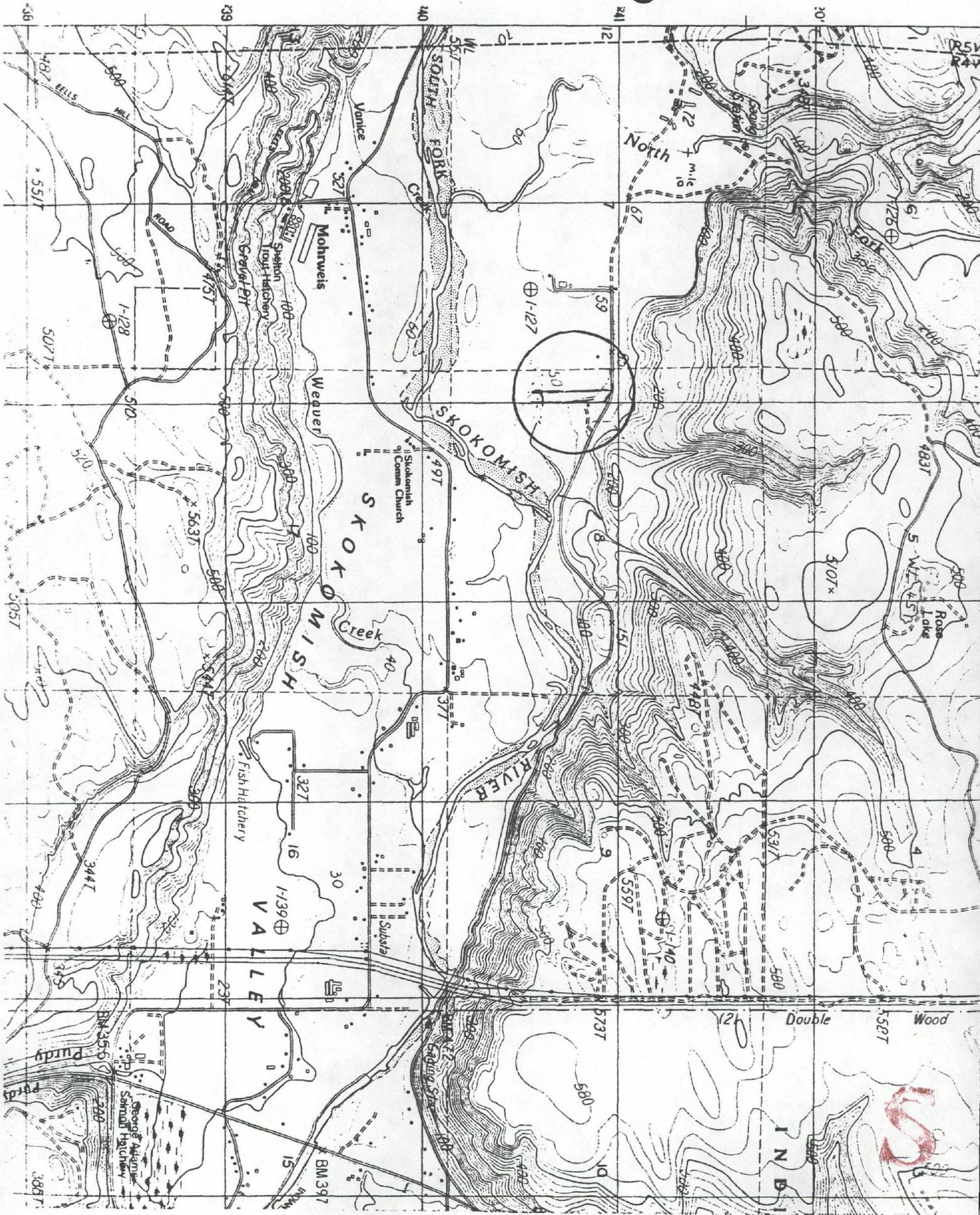


SPRING

NORTH BRANCH

SCALE: 1" = 50'

JK/FMC



SUSPENDED SOLIDS/INOCULANTS

Suspended solids should not pose a concern because the vacuum system proposed for this development is far superior to the "brush cleaning" system. Fecal waste, unused food, sand and silt will be vacuumed and gravity delivered to one of two 4000 cu. ft. settling basins. By cleaning raceways at least twice a week, the calculated retention time is 168 hours. The larger 20,000 cu. ft ponds are programmed for vacuuming twice a month which is consistent with good fish culture practice. If one of the abatement ponds is used, the retention is cut in half to 84 hours but the second pond becomes available for flushing water if necessary. After discussing this process with DOE and being informed that this practice was acceptable, our hatchery was designed with two abatement ponds.

DOE made clear to our design team, however, that a dose tank should be available to treat any fish that may need inoculant (FDA approved) treatment. A representative of DOE recommends a 500 gallon tank. This is small enough so that it could easily be transported to an appropriate treatment facility - not discharged under any circumstances.

DISSOLVED GASSES

Dissolved gasses will be returned to near atmospheric conditions before discharge. All water leaving the proposed raceways will be diverted through a pack column aerator designed for 1 cfs. The larger ponds will have aerators designed for 6 cfs. It is predicted these columns will result in dissolved gas levels near atmospheric conditions, which is believed to exceed all systems found in existing hatcheries throughout the state of Washington.

PREDATOR CONTROL

Predator control is indeed a problem associated with fish culture. This project will have bird netting stretched lengthwise over both the ponds and raceways with crosswires for support. All the nets will be spring tightened for ease of removal and refastening. This method should alleviate the flying predators.

Electric fences will be used, if necessary, to control any predators that would walk onto the site.

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NH₃ DETERMINATION (unionized ammonia)

Joe Banks, fish culture chemist with the US Fish and Wildlife Service, said it's almost impossible to have a NH₃ problem if the pH is below 7.5. Basically he has never seen it in Western Washington. However to calculate we provide the following:

Given for NH₃ Calculations:

1. Maximum peak loading: February/March = 80,000 lbs
(Note - annual harvesting monthly)
2. Temperature: 9°C
3. Maximum daily ration: 1100 lbs (dry).
4. Flow: 5850 gpm.
5. PH example: 7.0
6. Vacuum cleaning.
7. Percent unionized NH₃ in aqueous ammonia, pH 7.0 at 9°C
= 0.17% (Emmerson 1974).
8. Approximately 24 grams of ammonia are produced for each Kgram of food or 25 lbs per 1000 lbs of food used or 0.025 lbs per lb of food (Willoughby 1972).
9. For good fish culture the amount of NH₃ in the effluent is below 0.0125 ppm (Piper 1982).

STEP 1 Total Ammonia:

To calculate from the above we use (Wester 1977) formula for total ammonia produced by 1 lb food times total food daily.

$$1100 \text{ lbs} \times 0.025 = 27.5$$

STEP 2. To determine ppm ammonia.

Given 5850 gpm = 70,000,000 lbs water/day.

$$\frac{27.5}{70,000,000} = \frac{\text{PPM}}{1,000,000} = 0.39 \text{ ppm ammonia}$$

STEP 3. NH₃ ppm. Using Emmerson (1974), the NH₃ in 0.39 ppm ammonia at 9°C is 0.17% (pH 7.0)

$$\text{NH}_3 \text{ ppm} = \frac{0.17}{100} = \frac{X}{0.39} = 0.0017 \times 0.39 = 0.0007 \text{ ppm NH}_3$$

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Fish Management Consultants

5211 Blvd. Ext. Rd.

Olympia, WA 98501

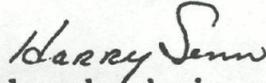
Phone (206) 352-3033 or (206) 943-4369

February 24, 1987

To: Dan Phillips

From: Harry Senn, Biologist

Subject: Effluent waters from salmon hatcheries



You asked my environmental concerns by discharging your proposed hatchery effluent water (13 cfs) into lower Richert Springs and then the Skokomish River.

First you should relate to the fact your design calls for vacuum cleaning and the use of packed column aerators on the outfall of each pond. You have two settling ponds with a very long retention time capability. The vacuum cleaning will best allow the removal of settled and suspended solids, the aerators will return the dissolved gasses to nearly atmospheric conditions. You have addressed fish treatment as recommended by D.O.E.

I have rarely observed negative conditions below hatcheries. Overfeeding and brush cleaning without settling might cause this. A negative situation may occur where 100% of the water in the stream was used, but this too is unlikely. You will have none of the above concerns.

Mr. Cloud of Washington Dept. of Ecology has related to me the W. D. F. Salmon Hatcheries have no problems, Minter Creek being a possible concern. I concur with him and site the cases of many Puget Sound stations where no harmful effects are apparent despite 100% water removal and return. Good examples exist at Issaquah Hatchery and others, where spawning and rearing populations thrive below discharges of hatchery water.

The Richert Springs slough area is broad and flat with a silty bottom, thus your added groundwater would probably not enhance natural production. If it were a faster moving stream with a low flow, it would. Regardless, I would predict there will be a slight benefit to fish life in the receiving stream.



ANDREA BEATTY RINKER
Director



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

7272 Cleanwater Lane, LU-11 • Olympia, Washington 98504-6811 • (206) 753-2353

March 4 1987

Mr. Dan Phillips
5315 Boulevard Extension Road
Olympia WA 98501

Dear Dan:

This is in response to your question regarding flow in Richer Springs Creek. I understand you wish to draw 5 cfs from the creek, add 8 cfs well water, use the combined flow to operate a private fish hatchery, and return the used hatchery water to the creek. There are two major issues in such cases:

1. Flow - (a) potential impacts of adding 8 cfs to the creek and (b) potential impacts of withdrawing 5 cfs from the creek.
2. Water Quality - Potential impacts of the hatchery wastewater to the receiving water.

In response to the first issue, addition of flow in the magnitude suggested should not have a deleterious impact on the creek. Increased flow should be a benefit during the summer, as long as the volume of the discharge does not fluctuate widely and the capacity of the channel is not exceeded. You will probably have to meet a minimum flow requirement for the section of creek between the hatchery intake and discharge. Indian Tribal Fisheries and the Washington Department of Fisheries will have to review your project. They may know of some local issues of which I am not aware.

I do not have enough information to comment on the water quality issue. Such a review would take more time than I now have available for this task.

Sincerely,

John Bernhardt
Water Quality Investigations Section

JB:cp